

=> file caplus

FILE 'CAPLUS' ENTERED AT 14:48:54 ON 29 MAR 2004

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FILE COVERS 1907 - 29 Mar 2004 VOL 140 ISS 14

FILE LAST UPDATED: 28 Mar 2004 (20040328/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> file wpix

FILE 'WPIX' ENTERED AT 14:48:58 ON 29 MAR 2004

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FILE LAST UPDATED: 26 MAR 2004 <20040326/UP>

MOST RECENT DERWENT UPDATE: 200421 <200421/DW>

DERWENT WORLD PATENTS INDEX SUBSCRIBER FILE, COVERS 1963 TO DATE

>>> FOR A COPY OF THE DERWENT WORLD PATENTS INDEX STN USER GUIDE,
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GUIDES, PLEASE VISIT:
<http://thomsonderwent.com/support/userguides/> <<<

>>> ADDITIONAL POLYMER INDEXING CODES WILL BE IMPLEMENTED FROM
DERWENT UPDATE 200403.
THE TIME RANGE CODE WILL ALSO CHANGE FROM 018 TO 2004.
SDIS USING THE TIME RANGE CODE WILL NEED TO BE UPDATED.
FOR FURTHER DETAILS: <http://thomsonderwent.com/chem/polymers/> <<<

>>> NEW! FAST-ALERTING ACCESS TO NEWLY-PUBLISHED PATENT

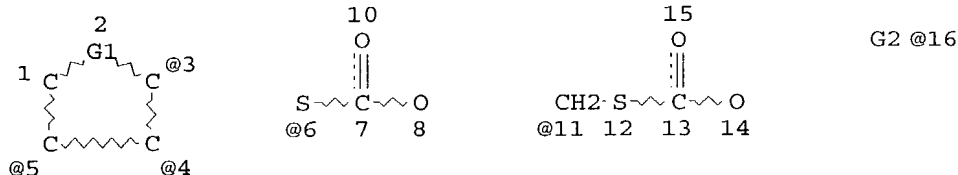
DOCUMENTATION NOW AVAILABLE IN DERWENT WORLD PATENTS INDEX
 FIRST VIEW - FILE WPIFV. FREE CONNECT HOUR UNTIL 1 MAY 2004.
 FOR FURTHER DETAILS: <http://www.thomsonderwent.com/dwpifv> <<<

>>> IMAGES FOR UPDATE 200421 HAVE NOT YET BEEN LOADED <<<

=> d que

L19

STR



VAR G1=O/S

VAR G2=6/11

VPA 16-3/4/5 U

NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 15

STEREO ATTRIBUTES: NONE

L21 48 SEA FILE=REGISTRY SSS FUL L19

L25 3 SEA FILE=CAPLUS ABB=ON PLU=ON L21 AND ((FLAVOR OR FLAVOUR) (4A)
) (ENHANC? OR PRECURSOR? OR IMPROV?) OR FOOD? OR TASTE?)

L29 (444)SEA FILE=WPIX ABB=ON PLU=ON FLAVOR(4A) (ENHANC? OR PRECURSOR)

L38 1 SEA FILE=WPIX ABB=ON PLU=ON THIOCARBONATE? AND L29

L39 1 SEA FILE=FSTA ABB=ON PLU=ON THIOCARBONATE? AND L29

L41 4 DUP REM L25 L38 L39 (1 DUPLICATE REMOVED)

=> d ti 1-4

YOU HAVE REQUESTED DATA FROM FILE 'CAPLUS, WPIX' - CONTINUE? (Y)/N:y

L41 ANSWER 1 OF 4 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN

TI **Flavor precursor** used in manufacture of foodstuffs as
 well as foodstuff flavors comprises thiol or mercapto compounds.

L41 ANSWER 2 OF 4 CAPLUS COPYRIGHT 2004 ACS on STN

TI **Foods** containing a diester of monothiocarbonic acid

L41 ANSWER 3 OF 4 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 1
TI Synthetic **precursors** of **flavor** compounds with a thiol
group

L41 ANSWER 4 OF 4 CAPLUS COPYRIGHT 2004 ACS on STN
TI Thiocarbonates as **flavor-enhancers** for **foods**

=> d ibib abs hitstr ind total

YOU HAVE REQUESTED DATA FROM FILE 'CAPLUS, WPIX' - CONTINUE? (Y)/N:y

L41 ANSWER 1 OF 4 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN
ACCESSION NUMBER: 2002-124270 [17] WPIX
DOC. NO. CPI: C2002-038275
TITLE: **Flavor precursor** used in manufacture
of foodstuffs as well as foodstuff flavors comprises
thiol or mercapto compounds.
DERWENT CLASS: D13 E13
INVENTOR(S): BRUIJNJE, A; FITZ, W; LYNCH, A G; NOOMEN, S N
PATENT ASSIGNEE(S): (UNIL) QUEST INT NEDERLAND BV; (UNIL) QUEST INT BV;
(BRUI-I) BRUIJNJE A; (FITZ-I) FITZ W; (LYNC-I) LYNCH A G;
(NOOM-I) NOOMEN S N
COUNTRY COUNT: 28
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
EP 1170295	A1	20020109	(200217)*	EN	11
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI TR					
US 2002037349	A1	20020328	(200225)		
JP 2002114991	A	20020416	(200242)		7

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
EP 1170295	A1	EP 2001-202596	20010705
US 2002037349	A1	US 2001-899825	20010706
JP 2002114991	A	JP 2001-207819	20010709

PRIORITY APPLN. INFO: EP 2000-202431 20000707
AN 2002-124270 [17] WPIX
AB EP 1170295 A UPAB: 20020313
NOVELTY - A **flavor precursor** comprises thiol or
mercapto compounds.
DETAILED DESCRIPTION - A **flavor precursor** is of
formula R1SC(O)OR2.

R1 = heterocyclic radical from formula (I) or (II);
 Z = O or S;
 R3, R4 = H or 1-4C alkyl;
 R2 = primary alcohol compounds of 1-18C alkanols, glycerol and mono-, oligo- and polysaccharides
 The oxygen of the R2O- moiety is attached to a primary carbon atom of R2.

An INDEPENDENT CLAIM is also included for a process for flavoring foodstuffs by converting the **flavor precursors** incorporated in the foodstuff at an elevated temperature of 70-150 deg. C in an aqueous medium.

USE - Used in the manufacture of foodstuffs as well as foodstuff flavors (claimed).

ADVANTAGE - The **Flavor precursor** has excellent properties in **enhancing** and imparting **flavor** to foodstuffs like coffee at the moment the foodstuff is prepared and/or consumed.

Dwg.0/0

AN 2002-124270 [17] WPIX

DC D13 E13

IC ICM A23L001-22; C07D307-38; C11B009-00

ICS A23L001-226

ICA A21D002-14; A21D002-28; A23F005-24; A23L001-39

MC CPI: D03-H01B; E07-A01; E07-A02B; E07-A02E; E07-B01

CMC UPB 20020313

M3 *01* F012 F111 K0 L4 L471 M210 M212 M272 M281 M311 M321 M342 M373
 M391 M413 M510 M521 M530 M540 M710 M720 M781 M904 M905 N225 N263
 N352 N511 N512 N513 Q211 Q220 Q221
 DCN: RA6AUV-N; RA6AUV-P; RA6AUV-U
 M3 *02* F012 F013 F111 K0 L4 L471 M210 M211 M212 M240 M272 M281 M320
 M413 M510 M521 M530 M540 M710 M720 M781 M904 M905 N225 N263 N352
 N511 N512 N513 Q211 Q220 Q221
 DCN: RA6AUW-N; RA6AUW-P; RA6AUW-U
 M3 *03* F012 F013 F015 F111 K0 L4 L471 M210 M211 M212 M240 M272 M281
 M282 M320 M413 M510 M521 M530 M540 M710 M720 M781 M904 M905 N225
 N263 N352 N511 N512 N513 Q211 Q220 Q221
 DCN: RA6AUX-N; RA6AUX-P; RA6AUX-U
 M3 *04* F012 F013 F014 F211 K0 L4 L471 M210 M211 M212 M240 M272 M281
 M282 M320 M413 M510 M521 M530 M540 M710 M720 M781 M904 M905 N225
 N263 N352 N511 N512 N513 Q211 Q220 Q221
 DCN: RA6AUZ-N; RA6AUZ-P; RA6AUZ-U
 M3 *05* F012 F013 F014 F015 F016 F019 F111 F112 F113 F123 F199 F211 F212
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 H522 H523 J521 K0 L4 L471 M126 M129 M137 M141 M149 M210 M211
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 M332 M342 M343 M373 M383 M391 M392 M393 M413 M510 M521 M522 M523
 M530 M540 M710 M720 M781 M904 M905 N225 N263 N352 N511 N512 N513
 Q211 Q220 Q221
 DCN: 0056-81701-N; 0056-81701-P; 0056-81701-U

L41 ANSWER 2 OF 4 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1976:592190 CAPLUS

DOCUMENT NUMBER: 85:192190

TITLE: **Foods** containing a diester of
monothiocarbonic acid

INVENTOR(S): Van der Heijden, Arnoldus; Schutte, Leonard

PATENT ASSIGNEE(S): Lever Brothers Co., USA

SOURCE: U.S., 9 pp.

CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 3978240	A	19760831	US 1975-589481	19750623
US 3787473	A	19740122	US 1971-204692	19711203
PRIORITY APPLN. INFO.:			US 1971-204692	19711203
			US 1973-411109	19731230
			GB 1970-57986	19701207

AB Thiocarbonates RSCO₂R₁ (R = alkyl or substituted alkyl, Ph, furfuryl, or furyl derivs.; R₁ = secondary or tertiary alkyl) were prepared and tested as precursors of flavoring thiols. The thiocarbonate diesters were prepared mainly by esterification of S-alkali metal salts. Thus, COS with KO₂Me₃ (exotherm) gave KSCO₂Me₃, which with MeSCHMeCl gave MeSCHMeSCO₂Me₃. Similarly prepared were 11 other RSCO₂R₁ where R = MeSCHMe, EtSCHMe, Bu, EtCHMe, HO(CH₂)₃, 2-furfuryl, 2-methyltetrahydro-3-furyl, or 2,5-dimethyl-4,5-dihydro-3-furyl and R₁ = Me₂CH, Me₃C, PrCMe₂ or EtCHMe. PhSCO₂Me₃ and O-tert-butyl-S-(2,5-dimethyl-3-furyl) thiocarbonate were prepared by treating the corresponding thiocarbonyl chlorides with KO₂Me₃.

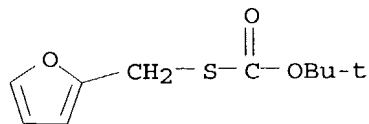
IT 36754-08-2P 36754-11-7P 36754-12-8P

36754-13-9P

RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation and flavor producing properties of)

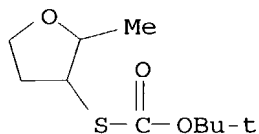
RN 36754-08-2 CAPLUS

CN Carbonothioic acid, O-(1,1-dimethylethyl) S-(2-furanylmethyl) ester (9CI)
(CA INDEX NAME)

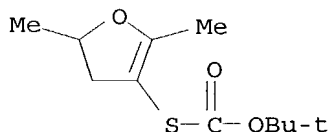


RN 36754-11-7 CAPLUS

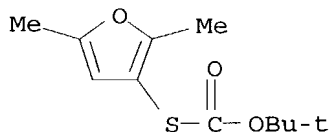
CN Carbonothioic acid, O-(1,1-dimethylethyl) S-(tetrahydro-2-methyl-3-furanyl) ester (9CI) (CA INDEX NAME)



RN 36754-12-8 CAPLUS
 CN Carbonothioic acid, S-(4,5-dihydro-2,5-dimethyl-3-furanyl)
 O-(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



RN 36754-13-9 CAPLUS
 CN Carbonothioic acid, O-(1,1-dimethylethyl) S-(2,5-dimethyl-3-furanyl) ester
 (9CI) (CA INDEX NAME)



IC A23L001-226
 NCL 426535000
 CC 23-17 (Aliphatic Compounds)
 Section cross-reference(s): 17, 27
 ST flavoring thiol precursor **food**; thiocarbonate diester thiol
 precursor; alkyl thiocarbonate thiol precursor; furyl thiocarbonate thiol
 precursor
 IT Thiols, preparation
 RL: PREP (Preparation)
 (flavoring, release from thiocarbonates)
 IT Flavoring materials
 (monothiocarbonic acid diesters as precursors of)
 IT 36754-06-0P 36754-07-1P **36754-08-2P** 36754-09-3P
36754-11-7P 36754-12-8P 36754-13-9P
 36760-43-7P 36852-50-3P 36852-51-4P 36852-52-5P 36852-53-6P
 36852-54-7P 36858-34-1P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation and flavor producing properties of)
 IT 55067-19-1P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT

(Reactant or reagent)
(preparation and reaction with alkyl halides)
IT 61056-35-7P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
(Reactant or reagent)
(preparation and reaction with butyl bromide)
IT 61056-34-6
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with butyl bromide)
IT 6831-82-9
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with carbonyl sulfide)
IT 865-47-4
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with carbonyl sulfide or (phenylthio)carbonyl chloride)
IT 75-44-5
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with dimethylfuranthiol)
IT 55764-23-3
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with phosgene)
IT 463-58-1
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with potassium alkoxides)
IT 24528-44-7
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with potassium tert-butyl thiocarbonate)
IT 13464-19-2
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with potassium tertiary butoxide)
IT 78-76-2 617-88-9 627-30-5 30672-41-4 61056-36-8
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with potassium tertiary butyl thiocarbonate)
IT 77-74-7 590-36-3
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with sodium hydride and carbonyl sulfide)
IT 109-65-9 33025-66-0
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with thiocarbonic acid ester potassium salt)

L41 ANSWER 3 OF 4 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 1
ACCESSION NUMBER: 1973:134604 CAPLUS
DOCUMENT NUMBER: 78:134604
TITLE: Synthetic precursors of flavor
compounds with a thiol group
AUTHOR(S): Schutte, Leonard; Van der Heijden, Arnold
CORPORATE SOURCE: Unilever Res., Duiven, Neth.
SOURCE: Journal of Agricultural and Food Chemistry (1973),
21(2), 226-9
CODEN: JAFCAU; ISSN: 0021-8561
DOCUMENT TYPE: Journal

LANGUAGE: English

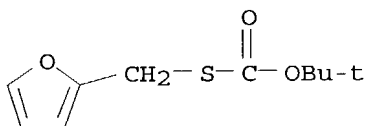
AB Flavoring agents possessing a thiol group are susually difficult to apply in **foods** due to their volatility and instability. A search was made for a suitable protection of the thiol group to yield a precursor that releases the flavoring material during heating. The O-tert-alkyl thiocarbonates, particularly the O-tert-Bu thiocarbonate, appeared to be satisfactory. These esters hydrolyze in an aqueous medium at elevated temps. to give the thiol of interest. The thiocarbonates of 9 flavoring thiols were prepared and investigated.

IT 36754-08-2P

RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of, as flavoring material and its toxicity)

RN 36754-08-2 CAPLUS

CN Carbonothioic acid, O-(1,1-dimethylethyl) S-(2-furanylmethyl) ester (9CI)
(CA INDEX NAME)

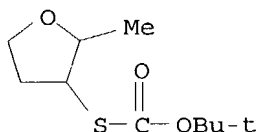


IT 36754-11-7P 36754-12-8P 36754-13-9P

RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of, as flavoring precursor)

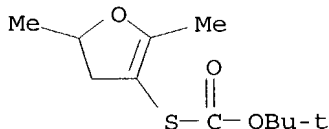
RN 36754-11-7 CAPLUS

CN Carbonothioic acid, O-(1,1-dimethylethyl) S-(tetrahydro-2-methyl-3-furanyl) ester (9CI) (CA INDEX NAME)



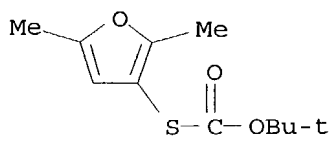
RN 36754-12-8 CAPLUS

CN Carbonothioic acid, S-(4,5-dihydro-2,5-dimethyl-3-furanyl)
O-(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



RN 36754-13-9 CAPLUS

CN Carbonothioic acid, O-(1,1-dimethylethyl) S-(2,5-dimethyl-3-furanyl) ester
(9CI) (CA INDEX NAME)



CC 17-2 (Foods)
ST **flavor precursor** thiol; butyl thiocarbonate flavor;
thiocarbonate **flavor precursor**
IT Thiols, biological studies
RL: BIOL (Biological study)
(flavoring materials precursors)
IT Flavoring materials
(thiols precursors for)
IT 32687-08-4P 36852-50-3P 36852-52-5P 36858-34-1P 38634-60-5P
41335-11-9P 41335-12-0P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
IT **36754-08-2P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of, as flavoring material and its toxicity)
IT 36754-07-1P **36754-11-7P 36754-12-8P**
36754-13-9P 36760-43-7P 36852-54-7P 41335-19-7P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of, as flavoring precursor)
IT 36852-51-4P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of, as flavoring precursor and its toxicity)

L41 ANSWER 4 OF 4 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1972:475114 CAPLUS

DOCUMENT NUMBER: 77:75114

TITLE: Thiocarbonates as **flavor-enhancers**
for **foods**

INVENTOR(S): Van der Heijden, Arnoldus; Schutte, Leonard

PATENT ASSIGNEE(S): Unilever N. V.

SOURCE: Ger. Offen., 40 pp.

CODEN: GWXXBX

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 2160418	A	19720615	DE 1971-2160418	19711206

GB 1379019	A	19750102	GB 1970-57986	19711203
AU 7136545	A1	19730614	AU 1971-36545	19711206
ZA 7108166	A	19730829	ZA 1971-8166	19711206
SE 384784	B	19760524	SE 1971-15646	19711206
BE 776358	A1	19720607	BE 1971-111379	19711207
NL 7116782	A	19720609	NL 1971-16782	19711207
FR 2117503	A5	19720721	FR 1971-43935	19711207
CH 555650	A	19741115	CH 1971-17799	19711207

PRIORITY APPLN. INFO.:

GB 1970-57986 19701207

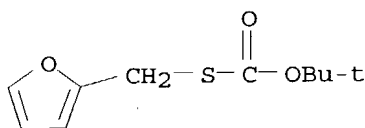
AB The thiocarbonates RSCO_2R_1 [I; R = MeSCHMe, EtSCHMe, Bu, EtMeCH, furfuryl, $\text{HO}(\text{CH}_2)_3$, Ph, 2-methyltetrahydro-3-furyl, 2,5-dimethyl-4,5-dihydro-3-furyl, 2,5-dimethylfuryl; R_1 = Me $_2$ CH, Me $_3$ C, PrMeCHCH $_2$, EtMeCHCH $_2$ CH $_2$] were prepared by treating RSCOCl (from COCl_2 and RSK, or from COS and ROK) with KOR $_1$, or by treating RCl with KSCO_2R_1 . I were used as RSH precursors for the flavor-enhancing of various foods. Thus, COS was bubbled through Me $_2$ CHOK-Et $_2$ O and MeSCHMeCl added to the residue at 0° to give 57% I (R = MeSCHMe, R_1 = Me $_2$ CH). Furfuryl chloride was refluxed 45 min with a suspension of $\text{KSCO}_2\text{CMe}_3$ to give 57% I (R = furfuryl, R_1 = CMe $_3$).

IT 36754-08-2P 36754-11-7P 36754-12-8P
36754-13-9P

RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

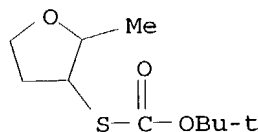
RN 36754-08-2 CAPLUS

CN Carbonothioic acid, O-(1,1-dimethylethyl) S-(2-furanylmethyl) ester (9CI)
(CA INDEX NAME)



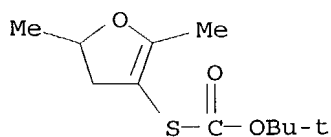
RN 36754-11-7 CAPLUS

CN Carbonothioic acid, O-(1,1-dimethylethyl) S-(tetrahydro-2-methyl-3-furanyl) ester (9CI) (CA INDEX NAME)

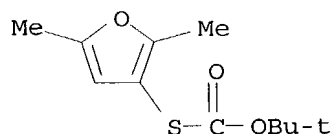


RN 36754-12-8 CAPLUS

CN Carbonothioic acid, S-(4,5-dihydro-2,5-dimethyl-3-furanyl)
O-(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



RN 36754-13-9 CAPLUS
 CN Carbonothioic acid, O-(1,1-dimethylethyl) S-(2,5-dimethyl-3-furanyl) ester
 (9CI) (CA INDEX NAME)



IC C07C; A23L
 CC 27-6 (Heterocyclic Compounds (One Hetero Atom))
 Section cross-reference(s): 17, 23
 ST thiocarbonate **flavor enhancer food**;
 isopropyl thiocarbonate **flavor enhancer**;
 methylthioethyl thiocarbonate **flavor enhancer**;
 furfuryl thiocarbonate **flavor enhancer**; butyl
 thiocarbonate **flavor enhancer**
 IT **Food**
 (flavor enhancement of, thiocarbonates for)
 IT Flavoring materials
 (for **foods**, thiocarbonates)
 IT 36754-06-0P 36754-07-1P **36754-08-2P** 36754-09-3P
36754-11-7P 36754-12-8P 36754-13-9P
 36760-43-7P 36852-50-3P 36852-51-4P 36852-52-5P 36852-53-6P
 36852-54-7P 36858-34-1P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of)